

WHAT IS CLAIMED IS:

1. An appliance maintenance apparatus for maintaining a plurality of appliances each including a plurality of light indicators respectively emitting lights showing the operation states of each of said appliances, comprising:

5 light detecting means for detecting said lights emitted from said light indicators.

2. An appliance maintenance apparatus as set forth in claim 1, in which said light detecting means includes a plurality of light receiving elements to be respectively positioned in face-to-face and spaced relationship with said light indicators of each of said appliances.

10 3. An appliance maintenance apparatus as set forth in claim 1, in which said lights collectively form light information, and said appliances have a common reset switch for resetting the operations of said appliances, and which further comprises judging means for judging whether to operate said reset switch after diagnosing said operation states of said appliances on the basis of said light information detected by said light detecting means, and reset switch operating means for operating said reset switch when said judging means judges to operate said reset switch.

15 20 4. An appliance maintenance apparatus as set forth in claim 2 or 3, in which each of said appliances includes a base plate having one side surface on which said light indicators are provided, and which further comprises:

25 a housing formed with an opening and accommodating a plurality of said base plates, said light indicators on said one side surface of the base plates being aligned with one another on said opening of said housing, and

 a front cover plate having an inner surface and positioned to cover said opening of said housing with said inner surface opposing said opening of said housing, said inner surface having a plurality of said light receiving elements provided thereon in face-to-face and spaced relationship with said light indicators.

5. An appliance maintenance apparatus as set forth in claim 4, in which said reset switch is provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced relationship with said reset switch.

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6. An appliance maintenance apparatus as set forth in claim 1, in which said lights collectively form light information, each of said appliances has a reset switch for resetting the operation of said appliance, and which further comprises judging means for judging whether to operate said reset switch after diagnosing said operation states of said appliance on the basis of said light information detected by said light detecting means, and reset switch operating means for operating said reset switch when said judging means judges to operate said reset switch.

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7. An appliance maintenance apparatus as set forth in claim 6, in which each of said appliances includes a base plate having one side surface on which said light indicators are provided, and which further comprises:

a housing formed with an opening and accommodating a plurality of said base plates, said light indicators on said one side surface of the base plates being aligned with one another on said opening of said housing, and

20 a front cover plate having an inner surface and positioned to cover said opening of said housing with said inner surface opposing said opening of said housing, said inner surface having a plurality of said light receiving elements provided thereon in face-to-face and spaced relationship with said light indicators.

25 8. An appliance maintenance apparatus as set forth in claim 7, in which said reset switches are provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced relationship with said reset switches.

9. An appliance maintenance apparatus for maintaining a appliance including a plurality of light indicators emitting lights showing the operation states of said appliance, comprising:
light detecting means for detecting said lights emitted from said light indicators.

5 10. An appliance maintenance apparatus as set forth in claim 9, in which said light detecting means includes a plurality of receiving elements to be respectively positioned in face-to-face and spaced relationship with said light indicators of said appliance.

10 11. An appliance maintenance apparatus as set forth in claim 9, in which said lights collectively form light information, and said appliance has a reset switch for resetting the operation of said appliance, and which further comprises judging means for judging whether to operate said reset switch after diagnosing said operation states of said appliance on the basis of said light information detected by said light detecting means, and reset switch operating means for operating said reset switch when said judging means judges to operate said reset switch.

15 12. An appliance maintenance apparatus as set forth in claim 10 or 11, in which said appliance includes a base plate having one side surface on which said light indicators are provided, and which further comprises:

20 a housing formed with an opening and accommodating said base plate, said light indicators on said one side surface of the base plate on said opening of said housing, and
a front cover plate having an inner surface and positioned to cover said opening of said housing with said inner surface opposing said opening of said housing, said inner surface having a plurality of said light receiving elements provided thereon in face-to-face and spaced
25 relationship with said light indicator.

13. An appliance maintenance apparatus as set forth in claim 12, in which said reset switch is provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced

relationship with said reset switch.

14. An appliance maintenance apparatus as set forth in claims 1 to 13, in which said lights collectively form light information, and which further comprises light information indicating means for indicating said light information detected by said light detecting means.

15. An appliance maintenance apparatus as set forth in claims 1 to 13, in which said lights collectively form light information, and which further comprises light information storage means for storing light information detected by said light detecting means.

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16. An appliance maintenance apparatus as set forth in claims 1 to 15, which further comprises a remote diagnosis control unit for remotely diagnosing said one or more appliances, a communication unit for communicating with said remote diagnosis control unit, and a communication cable operatively connected to said remote diagnosis control unit and said communication unit to ensure communication between said remote diagnosis control unit and said communication unit.

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17. An appliance remote maintenance system for maintaining a plurality of appliances from a remote location, each of said appliances including a plurality of light indicators respectively emitting lights showing the operation states of each of said appliances, comprising:

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an appliance maintenance apparatus including light detecting means for detecting said lights emitted from said light indicators, said lights collectively form light information, and information transmitting means for transmitting said light information detected by said light detecting means through a public network, and

a remote diagnosis control apparatus including information receiving means for receiving said information transmitted from said information transmitting means through said public network to ensure the remote diagnosis controls of said appliances.

18. An appliance remote maintenance system as set forth in claim 17, in which said light detecting means includes a plurality of light receiving elements to be respectively positioned in face-to-face and spaced relationship with said light indicators of each of said appliances.

5 19. An appliance remote maintenance system as set forth in claim 17, in which said appliances have a common reset switch for resetting the operations of said appliances, and in which

10 said remote diagnosis control apparatus further comprises judging means for judging whether to operate said reset switch after diagnosing said operation states of said appliances on the basis of said light information detected by said light detecting means, and instruction transmitting means for transmitting through said public network to said appliance maintenance apparatus an instruction to operate said reset switch when said judging means judges to operate said reset switch,

15 said appliance maintenance apparatus further comprises instruction receiving means for receiving said instruction transmitted from said instruction transmitting means through said public network, and reset switch operating means for operating said reset switch in compliance with said instruction transmitted from said instruction transmitting means and received by said instruction receiving means.

20 20. An appliance remote maintenance system as set forth in claim 18 or 19, in which each of said appliances includes a base plate having one side surface on which said light indicators are provided, and which further comprises:

25 a housing formed with an opening and accommodating a plurality of said base plates, said light indicators on said one side surface of the base plates being aligned with one another on said opening of said housing, and

a front cover plate having an inner surface and positioned to cover said opening of said housing with said inner surface opposing said opening of said housing, said inner surface having a plurality of said light receiving elements provided thereon in face-to-face and spaced relationship with said light indicators.

21. An appliance remote maintenance system as set forth in claim 20, in which said reset switch is provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced relationship with said reset switch.

22. An appliance remote maintenance system as set forth in claim 17, in which each of said appliances has a reset switch for resetting the operation of said appliance, and in which
said remote diagnosis control apparatus further comprises judging means for judging
whether to operate said reset switch after diagnosing said operation states of said appliance on
the basis of said light information detected by said light detecting means, and instruction
transmitting means for transmitting through said public network to said appliance
maintenance apparatus an instruction to operate said reset switch when said judging means
judges to operate said reset switch,
said appliance maintenance apparatus further comprises instruction receiving means
for receiving said instruction transmitted from said instruction transmitting means through
said public network, and reset switch operating means for operating said reset switch in
compliance with said instruction transmitted from said instruction transmitting means and
received by said instruction receiving means.

23. An appliance remote maintenance system as set forth in claim 22, in which each of
said appliances includes a base plate having one side surface on which said light indicators
are provided, and which further comprises:

a housing formed with an opening and accommodating a plurality of said base plates,
said light indicators on said one side surface of the base plates being aligned with one another
on said opening of said housing, and
a front cover plate having an inner surface and positioned to cover said opening of
said housing with said inner surface opposing said opening of said housing, said inner surface
having a plurality of said light receiving elements provided thereon in face-to-face and spaced

relationship with said light indicators.

24. An appliance remote maintenance system as set forth in claim 23, in which said reset switches are provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced relationship with said reset switches.

25. An appliance remote maintenance system for maintaining a appliance from a remote location, said appliance including a plurality of light indicators emitting lights showing the operation states of said appliance, comprising:

an appliance maintenance apparatus including light detecting means for detecting said lights emitted from said light indicators, said lights collectively form light information, and information transmitting means for transmitting said light information detected by said light detecting means through a public network, and

a remote diagnosis control apparatus including information receiving means for receiving said information transmitted from said information transmitting means through said public network to ensure the remote diagnosis control of said appliance.

26. An appliance remote maintenance system as set forth in claim 25, in which said light detecting means includes a plurality of light receiving elements to be respectively positioned in face-to-face and spaced relationship with said light indicators of said appliance.

27. An appliance remote maintenance system as set forth in claim 25, in which said appliance has a reset switch for resetting the operation of said appliance, and in which
said remote diagnosis control apparatus further comprises judging means for judging whether to operate said reset switch after diagnosing said operation states of said appliance on the basis of said light information detected by said light detecting means, and instruction transmitting means for transmitting through said public network to said appliance maintenance apparatus an instruction to operate said reset switch when said judging means

judges to operate said reset switch,

 said appliance maintenance apparatus further comprises instruction receiving means for receiving said instruction transmitted from said instruction transmitting means through said public network, and reset switch operating means for operating said reset switch in compliance with said instruction transmitted from said instruction transmitting means and received by said instruction receiving means.

28. An appliance remote maintenance system as set forth in claim 26 or 27, in which said appliance includes a base plate having one side surface on which said light indicators are provided, and which further comprises:

 a housing formed with an opening and accommodating said base plate, said light indicators on said one side surface of the base plate on said opening of said housing, and

 a front cover plate having an inner surface and positioned to cover said opening of said housing with said inner surface opposing said opening of said housing, said inner surface having a plurality of said light receiving elements provided thereon in face-to-face and spaced relationship with said light indicators.

29. An appliance remote maintenance system as set forth in claim 28 in which said reset switch is provided on said one side surface of said base plate, and said reset switch operating means is provided on said inner surface of said front cover plate in face-to-face and spaced relationship with said reset switch.

30. An appliance remote maintenance system as set forth in claims 17 to 29, which further comprises light information indicating means for indicating light information detected by said light detecting means of said appliance maintenance apparatus.

31. An appliance remote maintenance system as set forth in claims 17 to 29, which further comprises light information storage means for storing light information detected by said light detecting means of said appliance maintenance apparatus.